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The meeting was then made special, for the purpose of balloting for members, and the following were declared duly elected:—Edwin Birchall, Esq., Dublin; J. Neligan, Esq., Tralee; Robert Roberts, Esq., Harcourt-terrace; J. B. Doyle, Esq., Dublin.

The meeting then adjourned to the month of December.

DUBLIN UNIVERSITY ZOOLOGICAL AND BOTANICAL ASSOCIATION.

ENTOMOLOGICAL NOTES. BY A. H. HALIDAY, A.M.

THESE notes, presented to the meeting of the Association on the 21st of November, 1856, were referred to the Secretaries as a Committee of Publication. As the Illustrations of new or little known British insects forming part of them are intended to appear, accompanied by figures, in a future Number, only the notices appended, of captures and observations during the past season, are given here.

I have very little to lay before the Association as the result of collecting during the past season. Indeed, when I say that there were barely ten days of the summer on which I was able to collect at all, and this only in the neighbourhood of Dublin itself, or the adjoining county of Wicklow, which is comparatively beaten ground for Irish entomologists, it will not seem strange that the produce should be small,—perhaps rather encouraging that I have been able, with so little opportunity, to add to the Irish Insect Fauna two genera of Diptera, and to increase by one new species a group of this order, which has been particularly attended to previously in our own islands,—the Ephydrini.

An excursion to Lough Bray by a small party of the members of this Association, on the 4th of July, was not very productive. It was too late for *Empis borealis*, which was common there the preceding year, when a similar visit was made in May. Now, *Rhagio scolopaceus* instead was the most conspicuous fly that hovered over the tufts of whortleberries

and the storm-bowed stunted ash-trees. The face of the hill towards the upper lake lay black and desolate, the heather having been fired. In the lake itself, however, the botanists of the party found attraction enough to plunge, beyond their elbows, among the beds of *Isoetes lacustris* in bloom. The entomologists were less fortunate. The only thing worth recording by them is the capture of a second specimen of *Pelina ænescens*, nearly in the exact same spot where the first was taken the preceding spring, viz., beside a little stream which brawls, half-hidden among huge boulders of granite and deep beds of moss, as it descends from the lower lake to swell the waters of Glencree river.

Later in July, I was staying a few days at Newrath Bridge, and my walks were mostly, from that up the wooded valley of the Vartrey river, to the romantic gorge called the "Devil's Glen." It was here that the examples of the two genera referred to occurred. These were *Zygoneura sciarina* and *Atherix ibis*. Of the latter I found several specimens, but was not so fortunate as to witness the singular assemblages of this species which a writer in the "Entomological Magazine" has described. The females resort to trees overhanging the water, and there deposit their eggs, in a cluster, on the under-side of a leaf, so that the larvæ, when hatched, may fall into the water; after laying, the parent fly dies, clinging to the leaf. Others associate themselves there for the same purpose, till the leaves become loaded each with a pendant pyramid of the dead flies, conspicuous by their prettily banded wings. A German writer declares that he saw on one occasion a beech-tree, nearly every leaf of which bore such a charnel heap. I had an opportunity of observing the *Cyphon deflexicollis*, which abounded in the Vartrey, in all stages of its growth. This species is almost as truly a *water-beetle* as the Elmides, which often leave the water to climb up the stems of plants, and sun themselves, or use their wings to seek new quarters. The Cyphones were busy creeping among the wet gravel, or at the bottom of little pools, to lay their eggs there; while, on lifting up stones, to procure the larvæ and pupæ from the under-side, the newly disclosed beetles also came up abundantly to the surface, each enveloped in its own silvery air-bubble. Their coat of down is quite impervious to moisture, and, floating securely on the surface, they spread out their long wings, and rise with ease from the water. Among the small Diptera which swarmed about the river-bank, I found what may probably prove a third British species of *Corynoneura*. In the window of my apartment I observed daily some fresh specimens of the *Tanypus pusillus* and a few of *Pericoma bullata*. In company with Mr. E. P. Wright, I visited the lagoon, fringed with bulrushes—the Broad Lough—which lies between the Murrough of Wicklow and the main land. Unfortunately, we had neither of us an insect-net, and so the rare *Rhamphina longirostris* was seen only. *Pæderus fuscipes* was common on the mud, and we succeeded in finding the larva also.

During the exceedingly hot weather which ushered in the month of August, I was for three days at the southern extremity of the county of Wicklow. The burning sun seemed to have made the human popu-

lation half amphibious; and donkey-carts, which had conveyed the inland dwellers to the arms of Neptune, were drawn up, about the time of high water, along every sheltered cove and sandy bight of the shore, relieved of their living freight now seeking coolness and comfort amid the yielding waves. The undulating expanse of bleached sands, which stretches away north and south of the frowning bluff of Arklow Head, lay sweltering under the tremulous eddy of the heated air, in dazzling uniformity, as wearisome to the eye as the too impressible soil was to the feet, giving way under every tread. Numbers of the large-headed black ant, *Formica fuliginosa*, were abroad. This species usually makes its nest in rotten trunks of oak-trees: here they were far from any site of that sort, but seemed quite busy and happy in the torrid heat. Off the herbage in the hollows, consisting of dwarf willows and other less shrubby plants, I swept a pretty—and, as far as I can make out, undescribed—*Globiceps*, which I had taken once before in this county, at about 1800 feet of altitude, on Lugnaquilla. My walk over the Head, from which a steep, rocky path leads down to the nooks, fringed with *Asplenium marinum*, where Mr. Wright had discovered *Nebria complanata* abundant a month earlier in the season, did not procure for me a single specimen of this. In some hollows of the seaward face of the cliffs, moistened by oozings of fresh water, soaking through from the heights above, *Machilis maritima* was collected in troops, sipping the clear lymph from the brim. *Orphnephila testacea* was there also, and *Hydrophorus virens* gleaming like a beryl, as it rested, lightly poised, on its slender legs. This species seems to occur, though but sparingly, throughout the whole county of Wicklow wherever the perpendicular faces of rock, so common in the district, are shaded from the direct sunbeam, and kept moist by the tricklings from above. *Argyra argentata* also may be observed in the like haunts, gleaming like a snowflake, as well as *Anthomyia riparia* and others of this family. More common still, and this particularly in the darkest niches, was *Clinocera bipunctata*, along with which *C. unicolor* also occurred, but much more rarely. Against a sheer wall of rock, up the valley of the Aughrim river, about a mile above the Wooden Bridge, under such circumstances, and half immersed in the dripping bath, numerous slender larvæ, of various growth, were weltering, which glided rapidly away, when disturbed, in serpentine tracks across the slippery precipice. I had no convenient means for rearing any of these, and so can merely conjecture that they belonged to Clinoceræ, without being perfectly assured they may not have been the progeny of some of the Nemocera.

The low salt marsh which stretches away north of Arklow Harbour, marked on the maps as the "Ferry Bank," afforded me a new species of *Scatella* (or *Caenia*, since that other genus of Desvoidy's might better be reunited to this), *Limnophora*, n. sp., *Culex cantans*, &c. In a rushy hollow of the tongue of sand intercepted between the sea and the shallow creek formed by the back-water of the river, I procured several specimens of *Thinophilus versutus*, in both sexes, of which the male had been previously known to me only by Bohemann's description.

Mr. E. Percival Wright (Honorary Secretary of the Association) having placed at my disposal his Memoranda of the past season's entomological collecting, I extract from them some notices which also relate to the neighbourhood of Arklow:—

“In the middle of July many specimens of *Nebria complanata* were obtained, lurking under the luxuriant fronds of *Asplenium marinum*, at the foot of the rocks on the coast, about three miles south of the harbour. They were not easily distinguished by the eye from the white sand and black stone which met here, and they seemed to seek concealment by thrusting their heads into the crevices of the rock, from which it became necessary to dig them out with the point of a knife. The admission of this species into the Irish Fauna previously rested on the authority of a single specimen, found many years ago by Mr. Furlong, in the same neighbourhood. On the verge of the sand-hills, which bound the Wexford shore south of Arklow Head, *Convolvulus soldanella* was growing in profusion. The blossoms, as they closed at sunset, imprisoned numbers of the pretty *Dasytes viridis*. These insects, impatient of the confinement, were observed to make their escape by gnawing a small hole in the blossom, close to the calyx. The sands adjoining Arklow Harbour on the north cease at a little stream, the same which feeds the Tiknock corn-mills. This threads its way to the sea in a very winding channel, among osier beds and tall thickets of *Juncus acutus*, its bed at times nearly choked by masses of *Alisma plantago*, or by the twining suckers of *Rosa spinosissima* and *Rubus*. Along the edge of the stream *Bembidium pallidipenne* was common, and every now and then *Cicindela campestris* took wing, quickly returning in a curve, like the flight of the boomerang, nearly to the spot from which it had been flushed at first. The woods of Shelton Abbey, which fringe the left bank of the Avoca river, and climb the overhanging hills for miles above the town of Arklow, afforded, as an addition to the Irish Fauna, *Malthinus biguttulus*, beaten out of the oak.”

Mr. Wright notices also the occurrence of *Strangalia elongata* abundantly on Umbelliferæ in the Devil's Glen. I now turn again to my own entomological diary.

An hour's delay one afternoon, awaiting a train at Delgany Station, merely showed me that the shingly beach of Greystones had little to invite the entomologist at that season. The clay cliffs, which rise up directly from the beach north of the village, were baked almost as hard as bricks. Only in one spot, where a trace of dribbling moisture remained, I observed a few beetles, and among them a *Bembidium*, which seemed to present most of the characters by which it has been sought to distinguish *B. stomodes* from *B. rufipes*, to which, as a variety, Mr. Jacquelin Duval has reduced it.

The rest of my gatherings were made nearer to Dublin, and, that I may not take up too much time, I shall allude to but one or two of them. A very marked variety of *Cercyon littorale*, which I do not remember to have seen anywhere before, occurred this season, both on the Portmarnock shore (to myself), and on the North Bull sands, where it

was found by Mr. Furlong. In this variety, although mature in the black hue of the thorax, the elytra are pale-yellow, an oblong dark spot on each standing out in strong contrast, placed nearly as in *C. centrimaculatum*. On the sand-hills themselves *Chrysopa abbreviata* was more common than I had ever before found it; and, along with it, the freckled, sandy-coloured, stout larva, which, doubtless, feeds chiefly on the Aphides that abound on the sea-reeds. The salt marsh along the shore towards Baldoyle yielded *Canace nasica* pretty abundantly, the first time I had observed the species here, though common on some of the western coasts of Ireland; with this was *Glenanthe ripicola*, not very numerous, and a few of *Atissa pygmaea*.

In search of some coleopterous larvæ, I examined the North Bull sands more closely than I had done before. I was struck with the myriads of individuals belonging to a few species of Diptera which peopled the flat salt marsh on the landward side, where the sea-lavender (*Statice limonium*) grows in such profusion. *Madiza albipalpis* abounded in its favourite haunt, the blossoms of the sea-pink (*Armeria maritima*); infinitely more numerous, however, was *Leptomiza cinerella*, especially along the line where the mud passes into sand, with a scanty herbage of stone crop; neither was *L. gracilis* rare in that situation. In some dried-up rushy flats I met with *Campsionemus pusillus*—by no means a common species in the British Islands—in company with the more common sorts, *C. scambus*, *curvipes*, *armatus*, &c.

On these sands I found, and have succeeded in rearing to the perfect state, the larva of *Nemotelus uliginosus*, of which I was enabled, by the same experiment, to determine *Alysia maritima* as a parasite. This fills up a gap in the natural history of the family Stratiomydæ, of which *Nemotelus* was the only indigenous genus the younger states of which remained unknown, at least I am not aware of any published account of it: yet it is singular if it be as I suppose, some of the species of this genus being exceedingly common in the British islands, as well as elsewhere.

In conclusion, I extract some further notes by Mr. Wright, made during the autumn, in the neighbourhood of Newcastle, county of Down:—

Notwithstanding the intense heat of the season, which, even tempered by the sea breeze, at the lower level about the village was often oppressive, the peak of Sliebh Donard, the highest of the Mourne mountains, which towers directly from the sea to an elevation of 2789 feet, was mostly wrapped in a fleecy mist; and on several occasions, when the ascent was accomplished, the cold at that height was so severe as speedily to cut short any attempt at collecting, and to compel a hasty descent for shelter. One day, more favourable in this respect, permitted a continuance for some hours on the summit, and rewarded the search with several specimens of *Calathus nubigena* from beneath the stones, which are strewed about the base of the great cairn, but only on the southern side of this, and within a very narrow space. *Arpedium brachypterum* was also found. The other Coleoptera observed were such as

commonly occur on all the Irish mountains:—*Nebria brevicollis* and *nivalis* (of the latter, both the red- and the black-legged varieties), *Carabus catenulatus*, *Byrrhus pilula*, *Othius melanocephalus*, *Homalota bolitochara*, &c. In the plantations about Newcastle *Cyphon deflexicollis* and *C. griseus* were abundant. A single specimen only of *Cleonus sulcirostris* occurred upon the sands below, where Mr. Furlong had previously found the species pretty numerous. The other Coleoptera observed there were mostly such as are common on the sand-hills of our coast, except one (*Byrrhus dorsalis*), which is an addition to the Irish Fauna. Early in August the sands were traversed by hosts of the larvae of Coccinellæ; later in the season these had taken up their quarters on the thistles, where many of them fell victims to the attacks of the active Ichneumonidæ, which were continually running over those plants.

FRIDAY EVENING, JANUARY 16, 1857.

R. BALL, LL.D., President, in the Chair.

THIS meeting was specially directed to subjects connected with the Microscope.

The Minutes of last General Meeting having been read, were agreed to, and signed by the Chairman; after which

WM. ARCHER, Esq., read the following—

CATALOGUE OF DESMIDIACEÆ.

THE following list of the Desmidiaceæ which I have found about the "Feather-bed" and "Seechon" mountains, near Dublin, is not, of course, assumed to be a complete list. It is, however, a perfect one (with, perhaps, the exception of the genus *Pediastrum*) of the species I have met with in my limited experience; and I have no doubt but subsequent search will very much extend it. I have ventured to append to each species an opinion as to its frequency or rarity, which, I need hardly state, is to be interpreted as the result of my own experience only in a limited district. Some of those I have marked as rare may ultimately prove frequent. I am inclined to corroborate an observation made in Mr. Ralfs' beautiful "Monograph," as to the non-occurrence of the same species in the same pools from year to year. For instance, in the year 1855, a certain pool produced *Didymoprium Borreri* in great abundance. During 1856 I could not find a single specimen of that species; but its place was taken by a considerably less abundant development of *Hyalotheca mucosa*.

The "swarming" movement of the contents of the fronds of many species I have found to be very frequent. Mr. Ralfs suggests these moving granules may be analogous to the zoospores of other algæ, and perform a similar function. The movement resembles somewhat that observable in the fovilla of pollen. If these granules be zoospores, and even a moderate proportion of the same should prove productive, should